

## **Heavy Infestation of Tent Caterpillars in Chester County, Pennsylvania (Lepidoptera: Lasiocampidae).**

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During the spring of 1942 the infestation of tent caterpillars (*Malacosoma americana* Fabr.) was about the heaviest of any season for several years in Chester County. In both Chester and Delaware Counties, on the highway to Philadelphia, not one wild cherry tree escaped being infested. Apple trees were more heavily infested than usual, but their infestation is never as heavy as that of the wild cherry during any season. Wild cherry is more heavily attacked because the caterpillars prefer this plant to any other. Experiments have been made which show that impregnated females can be induced to lay their eggs around a wire of a suitable diameter, if twigs of trees are not present. If, however, twigs of a suitable diameter of several trees are made available to such females, cherry in most cases is selected. Even virgin females prefer wild cherry, but their effort to lay is in vain. Fertilization is absolutely necessary for normal egg-laying. This egg-laying behavior is true for all Lepidoptera, except a few whose eggs have been reported to hatch parthenogenetically. Adult females selecting wild cherry twigs on which to lay their eggs explain why these trees are more heavily infested than apple.

The author has been trapping insects by means of a light trap since 1936 and during this period, except this season, tent caterpillar moths were never caught in large numbers. This season, however, the light trap was crowded with the moths. The males were much more numerous than the females, yet the latter were present in fairly large numbers each night throughout the flying season. Several nests of caterpillars were burned from a few apple trees on the author's lawn, but many escaped being harmed and climbed the trees again and again to build new nests. After burning the newly formed nests several times, the caterpillars were finally destroyed.

About the middle of June several wild cherry trees in the vicinity of Lincoln University were examined. From ten to twenty or more egg-rings were found on some small trees. This

gives some indication of the number of impregnated females on wing during the season. This also gives an indication, if this year's conditions prevail, of next year's crop, since about 180 eggs are present in each egg-mass. Fortunately, females of *M. americana* mate and lay only once before death, which is not true for all Lepidoptera. Unfortunately, however, nearly all females on wing are impregnated, which enables them to lay normally. This statement is substantiated by the fact that dissections of most female Lepidoptera caught at the light trap have spermatophores in their bursae. This means, therefore, that they have mated and the number of spermatophores present indicates the number of pairings. Only one spermatophore is ever found in the bursa copulatrix of *M. americana*.

The work of Turner further substantiates the statement on the fertility of flying females. Our only hope, therefore, must depend on a fly (Diptera), which parasitises the caterpillar if the number is to be normal next year. Perhaps this fly and other parasites of the tent caterpillar were fewer this year, which may explain the outbreak.

#### REFERENCES.

TURNER, W. B. 1918. Female Lepidoptera at light traps. Jour. Agri. Research, 14 (3) 135-149.

WILLIAMS, J. L. 1939. The mating and egg-laying of *Malacosoma americana*. Ent. News, 50 (2), 45-50, (3), 69-72.

Id. 1940. The anatomy of the internal genitalia and the mating behavior of some Lasiocampid moths. J. Morp., 67 (3) 411-433, 2 pls.

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### The Insects in the American Museum of Natural History, New York City.

We received through 201 gifts approximately 38,000 specimens. Our study collections now contain approximately 1,735,000 specimens, of which roughly 398,000 are moths or butterflies; 346,000 are beetles; 288,000 are flies; 242,500 are ants, bees or wasps, and 232,500 are spiders and their relatives. Owing to the danger of bombing in New York City we moved our thousands of type specimens to the safer place provided by the Museum.—73rd Ann. Rept. Amer. Mus. Nat. Hist. for 1941, p. 13.